The Tasmanian devil population has significantly declined since the emergence of a lethal tumor disease called Devil Facial Tumor Disease (DFTD) in 1996 and DFT2 in 2014. These are two of four known transmissible cancers, with no documented origin or cause. Strategies such as selective culling, isolation, translocation, captive breeding, road fencing, and vaccines are currently being used by researchers to preserve the devil population. The ultimate purpose of this research is to identify the target age group of the devils to implement an effective vaccine. In this talk, we will present a system of ordinary differential equations to explore how the disease is affecting the age structure of the wild devil population.